

## Copter-Dragger Dragger™ CDE-24 & CDE-24D “Deluxe”

### Assembly & Operation

#### **GENERAL**

Thank you for purchasing the Copter-Dragger Dragger. We hope that this unique powered Dragger helicopter tug will enable you to fly more by allowing easy ground handling. Like all other aircraft moving devices, this unit has some limitations. It will not take your helicopter over large curbs or craters, but it will perform well on gentle slopes and hard surfaces. The Copter-Dragger Dragger will also handle wet surfaces and light snow and can be fitted with snow chains. It is simple to operate. It takes some practice and planning to use, but once accustomed to the handling, it is like having a strong buddy along every time you must push your copter back into the hangar. Practice tugging in forward and reverse. Next, try moving your copter in the open, away from the hangar and other obstacles. When you practice moving the unit into the hangar, have a friend watch for obstacles to help avoid damage to your copter. It also pays to have wheel chocks in place to prevent pushing back too far. Lines painted on the hangar floor and ramps will also help guide you to safe parking.

Your new Copter-Dragger Dragger comes partially pre-assembled from the factory. The procedures listed below are all you need to get your unit fully operational.

#### **SAFETY**

Read the owner’s manual carefully. Be thoroughly familiar with the controls and the proper use of the Tail-Dragger Dragger. Know how to stop it and disengage the controls quickly. Never allow children to operate it and keep them away while it is operating. Never allow adults to operate the Dragger without proper instructions. Keep the area of operation clear of all persons, particularly small children and pets. Exercise caution to avoid slipping or falling, especially when operating in reverse. Thoroughly inspect the area where the Copter-Dragger Dragger is to be used and remove foreign objects. Wear proper footwear that will improve footing on slippery surfaces. Never attempt to make any adjustments while the engine (motor) is running. Always wear safety glasses or shields during operation.

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Remove all items from shipping container and spread out neatly on floor or work bench.

Note: When referring to "left" or "right" throughout these instructions, it assumes you are standing behind the rear of the tug and looking forward. "Front" or "rear" assumes you are standing behind the tug looking forward.

1. Swivel Caster Wheel: Install at rear of frame by first inserting the long pin welded to the plate of the caster wheel through the hole at the rear center of the tug frame. Then slide the pin back to the right side of the frame into the hole on the opposite side. Insert cotter pins included with other miscellaneous parts at each end of the pin and bend to secure in place. Note: The caster wheel is ALWAYS collapsed when positioning tug underneath copter prior to loading onto tug.
2. The drive chain tension is preset at the factory and should have no more than an inch of slack. If the chain requires adjustment, loosen the four (4) nuts in the center of the tug frame and slide the steel plate forward or aft to set the desired chain tension. Tighten nuts firmly to hold in place.
3. Handle Installation: Remove each of the two (2) nuts for the two (2) bolts in the center of the main frame and to the right of the battery box platform. DO NOT remove the bolts. Place the lower part of the handle over the two (2) bolts. Install the washers and nuts and secure firmly. Notice the bottom of the rear bolt has several washers in place. This causes a pivot point when the caster wheel is collapsed for positioning the tug underneath the copter when loading the copter onto the tug mount (top of tri-pod) .
4. Tire Pressure: Maintain 30lbs psi.
5. Remove all contents from the battery box and spread out neatly.
6. Place battery box on frame. Place batteries in battery box with battery terminals to the front of the tug frame. Once the second battery is equally positioned to the first battery – place your hands on both batteries and push down with a little but firm force to seat batteries at bottom of battery box. They will fit perfectly.
7. Speed Control: Connect the long red wire from the speed control to the "positive" terminal on the front battery (right side) using the fasteners provided. Next, connect the short black wire from the speed control to the "negative" terminal on rear battery (left side) using the fasteners provided.  
11" Jumper Wire: Next, install the black wire with ring terminals at each end to the "negative" battery terminal on the front battery (left side) and the other end to the "positive" battery terminal on the rear battery (right side) using the fasteners provided.
8. Motor wires (2): Connect the red "B" wire from the motor to the red "B" wire coming from the bottom of the handle. Make sure the connection is secure. Connect the black "A" wire from the motor to the black "A" wire coming from the bottom of the handle. Make sure connection is secure.

9. Speed Control: Connect the "C" wire from the speed control to the "C" wire coming from the bottom of the handle. Connect the "D" wire from the speed control to the "D" wire coming from the bottom of the handle. Connect the "3 pin" connector from the speed control to the "3 pin" connector from the bottom of the handle.
10. Charger Wire Connections: (DELUXE MODEL ONLY) Connect black wire with quick connect on charger to the loose black wire with quick connect and two ring terminals at the other end. Connect the black "negative" ring terminal to the rear battery "negative" terminal (left side). Connect the "red ring" terminal to the front battery "positive" terminal (right side). Tighten firmly. Next, plug power cord into the bottom of the charger and secure cord while not in use. Note: Alligator clips are included as an alternative to the wire with the ring terminals.
11. Install battery box cover with the long straight side towards the electric motor (right side). The wires from battery should be positioned to the rear left corner of the battery box cover.
12. Charger: (DELUXE MODEL ONLY) On the backside and at the top of the charger, remove clear backing from the Velcro strips and push the charger firmly against the battery box until it is held firmly in place. Next, install the battery box strap around the battery box and the underside of the tug frame.
13. Use zip ties where necessary to hold wires in place.
14. Plug the charger (DELUXE MODEL ONLY) into a 110V outlet and charge batteries until the "green" indicator lights. Keep the charger plugged in between tug use. See charger manual for additional information.
15. You are ready for your aircraft loading adjustments once the batteries are charged. See additional instructions regarding equipment adjustments.

## Mounting tri-pod tower onto tug:

1. Assemble the tower and mount on the main tug frame using the nuts and bolts already attached to the tug frame. Make sure the tower is securely fastened to the tug frame and the mounting plates are flush against the frame. Adjust the pivot point on the tower if necessary to seat the tower to frame.
2. Use the spacers provided for adjusting the tower up in order to properly connect to your copter. It may take a couple of adjustments until it is perfect.
3. Connect the cable from handle to the "S" hook at the top of the tower by pulling out the pin on the tower with one hand and connecting the cable to it with the other hand.

Note: When loading the copter to the tug always collapse the caster wheel and carefully position the tug underneath your copter and squeeze the cable handle to unlock the connecting point at the top of the tower until the copter is seated properly at that point and then release the handle. Make sure the connection is firm before moving the tug. When you raise the tug frame – lock the caster wheel in place and you should be ready to tug your copter assuming no other adjustments are necessary.

## **Loading Your Helicopter:**

Move your tug up to the front of your helicopter. Collapse the caster wheel. Position the tug underneath the copter and directly below the mounting hub on the belly of the copter. Carefully lift the tug up and extend and lock the caster wheel in place. Be sure to use the cable handle to open the fitting at the top of the tower on the tug to accept the helicopter loading point.

VERY IMPORTANT: For hookup caster must be in full, retracted position, with wheel extending to the right. DO NOT lower when wheel extends to left. Damage can result.

USE CHOCKS: When backing into a tight parking space to protect against accidental collision with objects or walls nearby, always use chocks.

## **WHEEL BEARINGS:**

Tires should receive light oil a few times each year.

## **PRACTICE IS HIGHLY RECOMMENDED:**

Operating your Copter-Dragger Dragger before hooking up to the helicopter is essential. Get familiar with handling, speed, maneuvering, etc. Then try moving your helicopter in the open. Do not attempt to park in a tight space until you are thoroughly familiar with the unit. Always check for clearance around the fuselage and propeller, wing tips and tail features.